

SECTION 1: VIRGINIA'S PLAN: OVERVIEW

The Phase I Watershed Implementation Plan (WIP) has been developed by the Commonwealth of Virginia as required by the U.S. Environmental Protection Agency (EPA) as an implementation plan for the Chesapeake Bay Total Maximum Daily Load (TMDL).

1.1 Background and Approach to WIP Development

The Chesapeake Bay TMDL WIP can become a continuation of work begun with Virginia's Tributary Strategies in 2005. Adoption of the tributary strategies resulted in significant progress in a number of areas of point and nonpoint pollution control including:

- Establishment of first in the Chesapeake Bay watershed cap on nutrient loads from significant point source dischargers.
- Establishment of a nutrient credit exchange program that has been successful in ensuring orderly and cost-effective upgrades of sewage treatment plants.
- Expansion of nutrient management on a wide variety of land uses.
- Accelerated and focused agricultural cost-share program, including special emphasis given to "priority practices."
- Consolidated and strengthened stormwater management program
- Improved oversight and implementation of local erosion and sediment control and Chesapeake Bay Preservation Act programs
- Improved reporting of agricultural best-management programs to ensure full credit is given
- Improved reporting of stormwater management practices.

This plan charts out actions necessary to achieve the Chesapeake Bay TMDL allocations between now and 2025 with the greatest emphasis on actions planned between now and 2017. It incorporates the principles of adaptive management so that the success or failures of actions can be evaluated and adjustments to programs and strategies are made. This plan incorporates the experience of tributary strategy development along with new knowledge and new tools.

The WIP acknowledges shortcomings in available data or in our ability to analyze data where this is an issue. The actions proposed will be based on the best available science and data, but we expect the base of knowledge and information to expand and to make adjustments accordingly in consultation with affected stakeholders and the Environmental Protection Agency (EPA). Virginia is also bound by the provisions of state law that require cost evaluations along with a benefit analysis for implementation plans. Adjustments to this plan will be considered based on cost effectiveness and other key factors.

Although the Chesapeake Bay TMDL is often discussed and thought of conceptually as a single TMDL, it is comprised of 92 segments. Virginia contributes drainage to 39 segments within the watershed. All 39 segments are listed as impaired for excessive nutrients and sediments.

The WIP contains pollution loads allocated or assigned to different source sectors of nitrogen, phosphorus and suspended solids. These sectors include wastewater treatment plants, agriculture, forest, urban stormwater, onsite/septic and air sources that contribute to the nutrient and sediment (also referred to as total suspended solids or “TSS”) problems of the Chesapeake Bay. The plan also provides broad strategies proposed to meet those allocations. In accordance with federal expectations, those strategies and contingencies included in the plan are intended to meet reasonable assurance requirements for the Chesapeake Bay TMDL. However, we acknowledge that this is a plan and does not confer any additional budgetary, regulatory or legal authority to governmental agencies. Any programs or strategies that are not currently authorized by state law or regulation may be pursued through the legislative process or through the Virginia Administrative Process Act.

1.2 Guiding Principles for Virginia’s Watershed Implementation Plan

- Equity: This plan seeks to approach each sector with significant but achievable actions in a way that all sectors share in meeting TMDL allocations.
- Cost-effectiveness: This plan charts out actions and timeframes in a manner that emphasizes cost effective practices. It plans actions in a step-wise fashion over time to allow for less costly actions to be taken first, before more expensive actions are conducted. This plan also proposes an expanded use of the Nutrient Credit Exchange or other offset mechanisms to allow for flexibility in meeting reduction targets and TMDL allocations.
- Credit Past Progress: Nutrient and sediment reduction in the Chesapeake Bay watershed does not begin with this plan. Nutrient reduction has been taking place in a significant fashion for more than a decade. This plan recognizes the significant progress made and the relative progress among sectors.
- Reasonableness and Feasibility to Implement: This plan attempts to set high expectations for practices that are likely to be implemented across all sectors, not simply those that are theoretically possible but are not reasonable to expect given significant technical, legal or financial barriers.
- Meeting EPA’s Reasonable Assurance: EPA has advised that any plans submitted must meet the so-called “reasonable assurance” test. While there is some uncertainty to the meaning of that term, this plan includes necessary references to existing authority and means of implementation. For example, in cases where action requires additional legal authority, Virginia will chart a path for seeking such authority.
- Incorporating Future Actions: Allocations will be set at a level that presumes expected reductions from new and enhanced programs with the recognition that if such programs fail, the plan will be revisited and alternatives pursued.
- Course Correction in 2017: The plan is written knowing that new information and technologies will be available in the future, especially post-2017. EPA has established 2017

as an important date on the path to full implementation by 2025. It will be an opportunity to evaluate the significant actions that have taken place and re-evaluate the TMDL allocations based on changing conditions, new science and new technology. Therefore, this plan is less specific for actions in the post 2017 timeframe.

- Determine Best Use of Trading, Credits and Nutrient Exchanges: EPA has encouraged the states to consider exchanges of allocations between basins, and Nitrogen and Phosphorus exchanges within a basin to provide a more reasonable, cost-effective WIP for the Commonwealth. We have therefore included the use of the existing Nutrient Credit Exchange program to ensure that targets are met over the 15 year implementation period of the TMDL. A full description of the process to develop a more expansive program is contained later in this section.
- High Expectation for Federal Lands: Federal facilities in Virginia have made great strides in Chesapeake Bay protection. This plan presumes, as articulated in Executive Order 13508, that federal lands will receive treatment at extremely high levels.

1.3 Use and Limitations of the Chesapeake Bay Model

The TMDL is developed using the Chesapeake Bay model which allows for evaluation of implemented and proposed actions. While meeting the requirements of the model are important in order to meet the technical elements of the TMDL, our focus is on implementing practices and programs that result in real environmental improvement. We will use the model as a management tool, but we will tailor our actions within real scientific, economic, social and political frameworks.

The Chesapeake Bay watershed model is not a perfect representation of actual conditions on the landscape. Rather, it is a rough approximation. As such, we will continue to work with EPA to improve the model and use an adaptive management approach to adjust strategies as necessary based on those improvements. EPA has already committed to fix two known flaws that could result in changes to the strategies articulated in this document. We will also continue to provide EPA with our best information to ensure that the proper uses and limitations of the model are understood by citizens and stakeholders.

1.4 Stakeholder Engagement and the Stakeholder Advisory Group

The Secretary of Natural Resources formed an advisory group to assist in developing Virginia's plan to implement the Chesapeake Bay TMDL. The Stakeholder Advisory Group (SAG) provides a forum for discussion during the development of the Chesapeake Bay TMDL and the WIP. Virginia's approach to engaging a wide variety of interested parties through the SAG resulted in critical feedback on the model inputs, outputs, and the abilities to implement a host of practices across Virginia's bay watershed. The SAG met on December 17, 2009 and February 26, June 15, August 24, and November 16, 2010. Members reviewed and advised on sector pollutant load reductions and the sector allocations that will be used to meet the interim and final goals.

Significant numbers of public comments were received by the end of the comment period on November 8. This plan has been revised based on comments received and the comments will continue to be evaluated as implementation actions take place.

1.5 Summary of Source Sector Strategies

Wastewater

Allocation: TMDL waste load allocations (WLAs) for Significant Municipal and Industrial Facilities are set in two existing regulations: Water Quality Management Planning Regulation (9 VAC 25-720) and Chesapeake Bay Watershed General Permit Regulation (9 VAC 25-820). These are enforceable provisions that "cap" the dischargers' total nitrogen (TN) and total

phosphorus (TP), and allow for nutrient credit exchange to achieve compliance with regulatory requirements. These existing requirements are supplemented by an additional 1.6 million pound reduction of nitrogen and 200,000 lb reduction of phosphorus in the James River prior to 2017 and an additional reduction of 1.0 million pounds of nitrogen and 250,000 pound reduction in phosphorus in the James river post-2017

As described in the James River strategy, the additional nitrogen and phosphorus reductions established for the James River necessary to achieve current standards for chlorophyll “a” have been allocated in the aggregate to the basin beyond 2017 pending planning and technical assessment by significant discharges and a concurrent analysis of the chlorophyll standard. This is fully described in the James River strategy section of this plan.

Allocations for sediment loads will be set at technology levels since wastewater is an insignificant portion of the sediment load. Nutrient WLAs for Non-significant Municipal and Industrial Facilities will be set at levels consistent with the procedure outlined in the Code of Virginia, which establishes the 2005 loads as the levels that cannot be exceeded in the future. Combined Sewer System allocations should be set for communities with combined sewer systems (CSS) at Long Term Control Plan (LTCP) levels with adjustments for future urban stormwater management actions that may reduce the amount of loadings from CSS.

- 2010 – 2011 - Continue Existing Water Quality Management Planning Regulation (9 VAC 25-720) and Chesapeake Bay Watershed General Permit Regulation (9 VAC 25-820) with current loading allocations with additional pre-2017 reduction in the James River.
- Seek legislative changes necessary to require offsets for nutrient loads of less than 1000 gpd either as separate legislation or as a component of amendments to the Nutrient Credit Exchange.
- Seek legislative changes to establish requirement for offsetting loads for discharger that expand to less than 40,000 gpd.

Onsite/Septic

Allocation: This plan attempts to reduce the rate of growth in this sector through regulatory actions and proposes to offset some loads through an expansion of the Nutrient Credit Exchange Program.

- Implement amendments to Virginia Department of Health regulations for alternative systems. The proposed amendments require a minimum 50% reduction in delivered N for all new small alternative onsite systems in the Chesapeake Bay watershed resulting in an effective delivered load to the edge of the project boundary of 4.5 lbs TN/person/year. All large alternative onsite systems will demonstrate compliance with <3 mg/l TN at the project boundary.

- As a component of the revisions to the Nutrient Credit Exchange law proposed in 2012, allow for increased loads from onsite/septic to be aggregated at a jurisdictional level and available for offsets
- Seek revisions to the Code of Virginia will be considered to require all new and replacement systems in the Chesapeake Bay watershed to utilize either (1) “shallow-placed” systems capable of reducing nitrogen loss or (2) denitrification technology to reduce nitrogen loss and consider requirements for additional nitrogen reducing technologies in certain defined sensitive areas.
- Seek revisions to the Code of Virginia that will promote the use of community onsite systems which provide a greater reduction of TN.
- Seek legislative changes necessary to establish 5 year pumpout requirements for septic tanks in jurisdictions within Virginia’s Chesapeake Bay watershed (this mirrors the existing requirement for septic tanks within Chesapeake Bay Preservation Act areas).
- Seek legislative changes necessary to establish tax credits for upgrade/replacement of existing conventional systems with nitrogen reducing systems.
- Encourage the use of currently authorized “Betterment Loans” for repairs to existing systems and explore other financial incentives or relief to encourage the upgrade of existing systems especially for low and moderate income households.

Agriculture

Allocations: Allocations are set for unregulated agricultural operations at levels resulting from significantly expanded implementation of conservation and nutrient management plans addressing the application of nutrients, tillage methods, cover crops, retention or establishment of buffers and exclusion of livestock from streams. It is the expectation of this plan that these practices will be widely implemented on agricultural lands. WLA allocations for Concentrated Animal Feeding Operations (CAFOs) are set according to EPA guidance and adjusted to reflect Virginia data with the WLA based on full implementation of practices such as adequate waste storage and barnyard runoff controls.

- Implement resource management plans on most agricultural acres which may include: 35 foot grass or forest buffers between cropland and perennial surface waters; stream exclusion of livestock over time; implemented nutrient management plans.
- Improve tracking of voluntary agricultural and forestry BMPs.
- Account for all current mandated practices in Concentrated Animal Feeding Operations (CAFO) and permits required for certain poultry operations.
- Provide cost-share funding to achieve implementation of incentive based practices.

Urban Stormwater

Loads from stormwater will be expressed as both waste load allocations (for regulated activities) and load allocations (for unregulated stormwater). Allocations for newly developed land will be set at a level that results in no increase above allowable 2025 average nutrient loads per acre from previous land uses; unless offsets are obtained in the event on-site controls will not fully achieve allowable loads. Allocation for existing urban areas is based on high levels of implementation of management practices described below.

- Revise Virginia's Stormwater Management Regulations to prevent loads increases from new development (currently under revision).
- Additional BMPs on existing pervious and impervious lands through future permits and wider adoption of stormwater utility fees or other funding mechanisms.
- Restrictions for application of non-agricultural fertilizers and voluntary reporting from "for-hire" applicators.
- Municipal/county owned nonagricultural lands receiving nutrients to develop, implement and maintain nutrient management plans.
- Golf courses implement nutrient management plans.
- Controls on certain do-it-yourself non-agricultural lawn and turf fertilizers.
- Incorporate requirements within Virginia's Stormwater Management Regulations (under revision) that redevelopment meets reductions in nutrient and sediment loads.

1.6 James River Strategy

This plan proposes a different approach for the James River given its unique qualities and the chlorophyll standards that apply only to the James.

In 2005 the State Water Control Board adopted several regulations to address the nutrient and sediment impairments in Virginia's portion of the Chesapeake Bay and its tidal rivers, including the James River. In March 2005, the State Water Control Board adopted water quality standards to protect the Chesapeake Bay and tidal rivers; these standards included five new designated uses, numeric criteria for dissolved oxygen, submerged aquatic vegetation and water clarity, and a narrative chlorophyll criterion. Action on numeric chlorophyll criteria for the tidal James River was delayed to give further consideration to public comments and to develop nutrient loading and cost alternative analyses. The Board considered the James River chlorophyll criteria at their June 2005 meeting, and adopted criteria at their November 2005 meeting.

Concurrent with these actions, the Board also amended the Virginia Water Quality Management regulation to include nitrogen and phosphorus allocations for 125 significant wastewater dischargers throughout the Bay watershed that would, along with needed actions by non-point sources, achieve all of the new water quality standards.

Determining the appropriate numeric chlorophyll criteria for the tidal James River was particularly challenging and the rulemaking process included an additional step of using consideration of attainability to help determine the proper criteria since the other lines of evidence did not clearly point to specific and defensible criteria levels. EPA worked with Virginia on these regulations and approved them as meeting the requirements of the Clean Water Act. Virginia immediately began an aggressive program to implement nutrient reductions from point and nonpoint sources, including expenditures and commitments to add nutrient removal facilities at wastewater treatment plants, alone exceeding \$1.5 billion. Of this amount, over \$400 million has been directed to the James River basin. Localities and industries in the James River basin have developed their regulatory compliance plans and made long-term funding commitments based on the approved regulations.

Recent determinations by EPA during the Chesapeake Bay TMDL development process call into question the conclusions and agreements reached during Virginia's 2005 rulemaking process for the chlorophyll criteria. The draft nutrient allocations for the James River basin issued by EPA on July 1, 2010 are significantly more stringent than the levels that formed the basis for the state regulatory actions taken in 2005 for the chlorophyll criteria and the wastewater treatment plant allocations. Achieving these more stringent allocations would require estimated additional expenditures of between \$0.5 to 1.0 billion to the restoration costs in the James basin. In addition, technological advancements since 2005 in field monitoring for the chlorophyll parameter provide a much greater understanding of the concentrations and variability of chlorophyll in the tidal James River. These advancements include "data-flow" monitoring which provides thousands of data points during a single monitoring cruise. Additional scientific research has since taken place, providing a greater understanding of the impact of algae blooms on aquatic life. Also, EPA has recently issued criteria to protect against Harmful Algal Blooms that should be evaluated for application in the tidal James River.

The Commonwealth views the draft nutrient allocations included in EPA's July 1, 2010 letter for the James River basin to be at the lower end of a range of nutrient loads allocations needed to protect the aquatic life uses in the tidal James River. The Commonwealth concludes that additional scientific study is needed to provide a more precise and scientifically defensible basis for setting the final nutrient allocations.

- New information must be evaluated to ensure the Commonwealth's chlorophyll criteria for the tidal James River are appropriately protective of the river's designated uses and are based on the best scientific information and data currently available. This new information includes: application of Harmful Algae Bloom criteria; analysis of data-flow monitoring information to better understand the size and duration of algal bloom events; scientific research; and other information supplied by citizens and stakeholders.
- In order to conduct a thorough review of available information, and to allow sufficient time for the collection of additional data-flow information in the tidal James River during various hydrologic seasons, a three-year time period is needed to complete this study.
- In response to creditable findings from the three-year study, DEQ will ask the State Water Control Board by 2015 to begin the rulemaking process under the Virginia Administrative Process Act to consider amending the chlorophyll criteria in the Water Quality Standards [9

VAC 25-260-310.bb.]. The time estimate for completing the Virginia rulemaking process is 18 to 24 months. Virginia may also consider developing a local James River chlorophyll-based TMDL.

- The schedule described above, not to exceed five years, allows for production of revised chlorophyll criteria well within the time period for Phase 1 implementation of the Bay TMDL.
- As part of the review of the chlorophyll criteria, we will review the modeling framework used in predicting chlorophyll response to changes in nutrient and sediment inputs to the James River. The usefulness of the model can be improved by providing information on algae bloom events, both temporally and spatially, instead of long-term average chlorophyll concentrations.
- Appendix 2 to this Strategy is a draft Study Plan for this review and update of the James River site-specific numeric chlorophyll water quality criteria. DEQ welcomes comments on this draft plan.

James River Implementation Stages:

Stage 1 - Virginia continues implementation of current nutrient regulations in the James River basin with an additional 2.60 mp/y Total Nitrogen (“TN”) and 0.45 mp/y Total Phosphorus (“TP”) reduction from significant wastewater discharges identified in the final computer model input deck submitted to EPA. The 2012 Watershed General Permit will include those point source allocations in the current permit (no compliance schedule/limits effective January 1, 2011), plus allocations for identified discharges to accomplish the following: i.) an additional reduction of 1.6 mp/y of TN and 0.2 mp/y of TP in the lower tidal James River with a compliance schedule to end December 31, 2016; and, ii.) a provision requiring an additional 1.0 mp/y TN reduction in the lower tidal James River and an additional 0.25 mp/y TP reduction throughout the James River basin with a compliance schedule ending December 31, 2021. These reductions, combined with actions proposed in the other source sectors, will be sufficient to achieve the nutrient allocations for the James River basin needed to meet the dissolved oxygen water quality criteria. Virginia will also achieve by 2017 60% of the total N and P allocations established by EPA on July 1, 2010 with the expected reductions from point sources combined with actions proposed in the other source sectors.

Stage 2 - The remaining 3.3 mp/y N and 0.35 mp/y P reductions called for in the July 1, 2010 allocations in the James River basin to achieve the chlorophyll water quality criteria are assigned as an aggregate waste load allocation (WLA) to all of the significant wastewater treatment facilities in the James River. The Commonwealth expects the TMDL will likewise assign this aggregate WLA in the same manner.

Achieving the chlorophyll-based nutrient reductions, as well as the additional 1.0 mp/y TN and 0.25 mp/y TP reductions described in Stage 1, will be accomplished through a schedule extending into the 2017 Watershed General Permit for the following reasons:

- The July 1 allocations issued by EPA were significantly more stringent than the current point source nutrient control program being implemented by the Commonwealth of Virginia and the dischargers.

- The new chlorophyll-based allocations call for POTWs, with few exceptions, to achieve state-of-the-art treatment [TN = 3mg/l and TP = 0.1 mg/l] throughout the entire James River basin, as well as reductions from industrial dischargers that may not be attainable.
- Achieving these additional significant nutrient reductions in the near term would be disruptive to the on-going nutrient reduction program being implemented through State regulations and permits, financing mechanisms including WQIF Grant Agreements, local debt and sewer rate increases, and related construction of treatment facilities.
- Neither Virginia nor any of the individual wastewater treatment facilities that would be affected has evaluated what engineering and technology changes would need to be made to the various point sources and their recent compliance plans and construction projects in order to adapt to these unanticipated allocation revisions or how long it would take to make those changes.
- In addition to the engineering and technology evaluations, issues of equity, cost-effectiveness, attainability, phasing in multiple projects and financial capabilities at the state and local levels will need to be explored to ensure the best interests of the citizens of the Commonwealth are served.

For the Watershed General Permit effective January 1, 2012, the Fact Sheet accompanying the permit will acknowledge and describe the staged implementation approach. The permit will also contain a schedule for completing the appropriate evaluations described above to ensure that needed additional upgrades to wastewater treatment facilities will proceed expeditiously once the Watershed General Permit is reissued effective January 1, 2017.

The Commonwealth expects to develop a local James River basin TMDL by 2016 following the planning and technical assessments by significant dischargers and a concurrent analysis of, and possible revision to, the chlorophyll standard as described above. This local James River basin TMDL will consider revisions to allocations among all source sectors as needed to achieve equitable and cost-effective nutrient reductions. Specific WLAs will be assigned to each significant wastewater treatment facility and revised allocations to other source sectors as appropriate to meet the TMDL basin allocations.

When the Watershed General Permit is reissued in 2017 it will contain allocations for individual facilities to fully comply with the WLAs of the updated TMDL. The permit will also contain interim milestones leading to compliance with these allocations.

1.7 An Expanded Role for the Nutrient Credit Exchange

In 2005 the Commonwealth took a major step in protecting the Chesapeake Bay by establishing the Chesapeake Bay Watershed Nutrient Credit Exchange Program (Code of Virginia at §62.1-44.19:12). The General Assembly determined that adoption and utilization of a watershed general permit and market-based point source nutrient credit trading program would assist in: (a) meeting pollution reductions and cap load allocations cost-effectively and as soon as possible in

keeping with the 2010 timeline and objectives of the Chesapeake 2000 Agreement, (b) accommodating continued growth and economic development in the Chesapeake Bay watershed, and (c) providing a foundation for establishing market-based incentives to help achieve the nonpoint source reduction goals.

An investment of over \$1.5 billion in implementing this program over the past five years has enabled the Commonwealth to achieve significant reductions in nutrient loads discharged to the Chesapeake Bay from Virginia's municipal and industrial wastewater treatment facilities. The Commonwealth is recognized nationally for having one of the most robust, comprehensive, and successful credit exchange programs. Additional information about this program can be found at the following websites:

<http://www.deq.virginia.gov/vpdes/nutrienttrade.html>
<http://www.theexchangeassociation.org/Default.htm>

In 2009, the General Assembly expanded the Commonwealth's nutrient offset program by amending the Code of Virginia to allow for a stormwater nonpoint nutrient offsets program to meet nutrient control requirements for new development.

Overview of the Existing Nutrient Credit Exchange Program

- **Wastewater** – full participation in program; have options of either installing additional nutrient removal facilities or buying credits; facilities performing better than their allocations may sell credits in the market.
- **Storm Water [New Development]** – participation in program is limited to new development and to securing non-point source offsets when on-site practices cannot practicably achieve sufficient pollution reductions.
- **Agriculture and Forest Land** – may sell credits only to new or expanding wastewater treatment facilities or new development if the agriculture lands or newly created forest area meet established “baselines” of management practices. A complete description of current baselines for agricultural operations can be found at:
- **Storm Water [Existing Development or MS4 permittees] and On-Site/Septic Systems** – not currently allowed to participate in program.

Need for an Expanded Nutrient Credit Exchange Program

When the Chesapeake Bay TMDL is issued, about half the land area of the Commonwealth will be under nutrient and sediment load allocations that cap the discharge of these pollutants from point and non-point sources. Unless changed, these pollutant allocations will become permanent pollutant caps on each of the major Virginia Bay river basins that all the source sectors, added together, cannot exceed. In order to help meet the challenging pollution reduction requirements imposed by the Bay TMDL, this Phase 1 WIP recommends the Commonwealth expand the nutrient credit exchange program to better ensure that future nutrient and sediment reduction

actions are as equitable and as cost-effective as possible among all of the source sectors. An expanded program also allows local decision-makers to consider nutrient and sediment generating potential as they face development, land use, and capital planning challenges.

The Nutrient Credit Exchange is a tool to allow for greater flexibility in the implementation of necessary nutrient reduction practices. The exchange will also allow for decisions regarding the timing of and location of implementation activities. It is not presumed that the expansion of the Nutrient Credit Exchange will achieve all necessary reductions. As the WIP describes, significant management actions are proposed in each sector with all basins meeting the 60% reduction goal by 2017 and the TMDL allocations by 2025. As with all aspects of TMDL implementation, Virginia will use the two-year milestones to assess the status of the nutrient credit exchange with respect to the WIP.

Expanding the Nutrient Credit Exchange Program

The following is the proposed schedule and preliminary list of issues to be addressed as work begins on a modification to the existing law and program.

TIMELINE:

January 2011: Resolution will be introduced in the General Assembly that directs a study of the nutrient credit exchange program by the Secretary of Natural Resources assisted by a stakeholder group and staffed by state agency personnel. Virginia will notify EPA of all meetings.

March 2011 – October 2011: Meetings of stakeholder group

November 2011 – Report Presented to Governor and General Assembly and sent to EPA.

January 2012 - Introduce bill in House and Senate

July 1, 2012 – Should bill pass, revisions to Credit Exchange Law become effective.

Annual Reporting: Virginia expects that current annual reporting requirements contained in the Code of Virginia will continue and full accounting will be done on an annual basis.

September 1, 2015 – Evaluation of credit availability and expectations for capacity for the Exchange to meet TMDL reductions and development of WIP contingencies for meeting TMDL allocations.

By December 31, 2017 – TMDL allocations modified to reflect credit availability and WIP revisions to assign reduction responsibilities.

ISSUES TO BE ADDRESSED BY STUDY

Available credits based on TMDL allocations and WIP.

The availability of credits from existing facilities and the ability of new sources to generate credits that are sufficient to meet and maintain TMDL allocations is a critical factor in the success of an expanded program. The study will use current information regarding the

availability of credits as reported by the existing Nutrient Credit Exchange, potential credit generation based on existing nonpoint source guidance, and testimony and other information brought to the committee from agencies, academic institutions, private interests, landowners and others. The study will also examine the likely rate of use of credits by various sectors based on growth rates, permit requirements and other factors.

Regulatory “drivers” for participation by additional sectors

The current nutrient credit exchange is “driven” by requirements in the following sectors:

Wastewater: Requirements in § [62.1-44.19:14](#) of the Code of Virginia that allows use of credits to achieve compliance with nutrient allocations for wastewater treatment facilities authorized to discharge nutrients by the Chesapeake Bay Watershed General Permit.

Stormwater: Requirements in § [10.1-603.4](#) of the Code of Virginia that allows use of credits in cases when a series of criteria have been met and where “full compliance with post development nonpoint nutrient runoff compliance cannot practicably be met on site” (§ [10.1-603.8:1](#). D (iv))

Additional Drivers for other source sector to be addressed during the study:

- Analysis of regulatory requirements applied to the onsite/septic including proposed regulatory or statutory changes that require nutrient reducing systems and methods or requirements for local governments to “aggregate” loads from the septic/onsite sector and require offsets those loads from other sectors within a jurisdiction or through the credit exchange within a river basin.
- Requirements of the General Permit for Construction Activity: Regulations are under development that will likely change water quality requirement for construction activities. Virginia law allows for nutrient credits to be used to achieve nutrient reductions required under Section 10.1-603.8:1. With more stringent nutrient criteria under development as well as requirements in the WIP for loadings not to exceed loads from previous land uses, there is likely to be additional demand from new development.
- Requirements to implement the Chesapeake Bay TMDL contained in any MS4 permits. The study will also examine the allocations assigned to MS4 permittees. It will assess the utility of establishing an association of permittees similar to the existing Nutrient Credit Exchange Association who would have collective responsibilities under a watershed general permit or other regulatory vehicle.

“Baselines”

In the existing program, Virginia law establishes “baselines” above which credits can be generated. For point sources, point source credits are the difference between waste load allocation for the permitted facility and the monitored nutrient loads that are discharged by that facility with an adjustment by the applicable delivery factor. For nonpoint sources the Code of Virginia only allows credits for practices that “achieve reductions beyond those already required

by or funded under federal or state laws or the Virginia tributaries strategies plans...” Agency guidance has been developed that has established the parameters from agricultural practices and land conversion. Given the Code of Virginia establishes the baseline for agricultural credits as “Virginia tributaries strategies plans”, some modification to the existing program would be necessary to tie the baseline to the TMDL allocations and the underlying agricultural practices contained in the WIP.

Baselines for urban practices have not yet been established and will be addressed in the study. One option is a “performance baseline” that establishes a reduction percentage based on existing urban loads to those established in Virginia’s WIP. Under such an approach, credits could be generated from urban lands that go beyond the percentage reduction established in the TMDL on a site by site basis. Another option would be to allow credits to be generated on a practice by practice basis so long as proposed practices exceed the efficiencies presumed in the Chesapeake Bay model.

Land conversions are currently credited in the existing program and modifications may be recommended based on updated modeling information provided by EPA.

Other Key Issues

The existing program has strict certification, enforcement and accounting requirements prescribed in law and regulation and these current standards will be reviewed during the study as well as their applicability to the proposed expansion. The Code of Virginia, Section 62.1-44.19:18 establishes compliance and reporting requirements for the program. Section 62.1 – 44.19:18 empowers the Department to audit and take other actions necessary to ensure that reports are correct.

Options for including trading or offsets in permits for currently regulated entities will be addressed by the study. Based on final statutory language adopted by the General Assembly, Virginia will develop in consultation with regulated entities, a permitting approach that accounts for trades or offsets.

The study will also evaluate the feasibility of incorporating unregulated lands into the nutrient credit exchange and determine the drivers that would help achieve reductions where regulatory requirements do not exist.

The study will also examine the utility of establishing public or private nutrient banks or a nutrient trading fund that could serve to purchase credits with funds collected from program participants that would meet permit obligations or achieve additional reductions.

TMDL Allocations and the WIP

The source sector allocations included in this Phase 1 WIP are based in part upon a functioning and viable expanded nutrient credit exchange program. The 2025 TMDL nutrient allocations are shown in the tables in Section 2. For the wastewater, stormwater, and on-site sectors, an expanded credit exchange would provide attainment options outside of sole reliance on sector specific best management practices (BMPs).

1.8 TMDL Overview and Introduction

This preliminary or Phase I WIP has been developed by the Commonwealth of Virginia as required by the U.S. Environmental Protection Agency. It contains all components outlined by the EPA in their guidance letter of Nov. 4, 2009. This document also serves as a revision to the Commonwealth's Chesapeake Bay nutrient and sediment reduction strategy.

This watershed-wide plan is submitted to EPA as part of the multi-state and federal effort to develop a nutrient and sediment Total Maximum Daily Load for the Chesapeake Bay and its tidal tributaries. More locality-specific plans will be developed in Phase II.

While Virginia is responsible for developing this WIP, EPA is responsible for developing the TMDL for the Chesapeake Bay. The WIP is a state plan to meet the federal maximum loads established by EPA. Complete information from EPA is available at:
<http://www.epa.gov/chesapeakebaytmdl/>

A TMDL is an assessment of the maximum amount of a pollutant or pollutants that a body of water can accept, while still achieving water quality standards. The Chesapeake Bay TMDL sets reduction targets to reach acceptable levels, or allocations, for nitrogen, phosphorous, and sediment.

Impairments are based on monitoring for compliance with state water quality standards. Waters identified as impaired are required under the Federal Water Pollution Control Act to have a TMDL, which must identify the total pollutant loading allowable to protect the receiving waters, and allocate that loading to the different source sectors. These sectors include wastewater treatment plants, agriculture, forest, urban/suburban stormwater runoff, onsite/septic and air.

The term “Chesapeake Bay TMDL” is actually a bit of a misnomer. The Bay and its tributaries are made up of 92 segments identified by EPA. Each of these segments, including the 40 that are all or in part in Virginia, is considered impaired and will have a TMDL and WIP developed.

The goal of this preliminary plan is to broadly identify how to meet water quality standards by 2025 with interim target loads met by 2017. It seeks to improve water quality conditions including water clarity and dissolved oxygen levels needed to sustain underwater grasses, finfish, shellfish and other aquatic organisms. EPA also expects this plan to meet “reasonable assurance requirements” for the Chesapeake Bay TMDL. To satisfy these requirements the plan must include identification of gaps between needed controls and existing capacity; a commitment to systematically fill gaps; a commitment to track, monitor, and assess progress at set times; and a commitment to identify and implement contingency actions if milestones are not met.

This plan represents Phase I of an ongoing effort to implement actions needed to restore the Chesapeake Bay and the tidal portions of its tributary rivers. EPA guidance states that Chesapeake Bay states (Virginia, Maryland, Pennsylvania, West Virginia, Delaware and New York) and the District of Columbia develop Phase I WIPs that divide nutrient and sediment target loads among nonpoint source sectors and individual permitted sources within impaired

segments. EPA guidance also calls for the plan to describe the authorities, actions, and control measures that will be implemented to achieve nonpoint and point source allocations.

Beyond the Phase I and Phase II expectations, EPA expects jurisdictions to develop Phase III Watershed Implementation Plans in 2017 with refined actions and controls. This Phase III planning process is part of an adaptive management approach that seeks to ensure that the actions needed to meet water quality standards are implemented by 2025.